

which was proper for the uniformity plasma formation. The one point is MSA4, in order that axisymmetric TM01 mode like figure 3 can resonate, frequency of the UHF wave which applies in discoidal electrode 3, diameter of discoidal electrodes 3, material of dielectric disk 2 and thickness are set. In this embodiment, the frequency of UHF wave was 450MHz, diameter of discoidal electrodes 3 was 255mm, and the alumina of the 20mm thickness was used as dielectrics 2. The two-point is as follows: in order that the high frequency can be axisymmetrically supplied to the discoidal electrode 3, feed division 11 is made to be the conical state, and it becomes the structure which supplies the antenna from the conic top with electricity. And inner cylinder 12 of the quartz are let in as a metal pollution countermeasure in this apparatus. In case that inner cylinders 12 of such dielectric-ness are let in, when the inner cylinder comes out a little is eccentric, there is a problem in which the plasma deviates from the axisymmetric. In order to solve this problem, it arranged the conducting cylinder 13 grounded in the earth potential, and make the length of the overlap part which defines it in figure 1 as an earth loop height of inner cylinders 12 and conducting cylinder 13 not less than 10mm, so that it can be perfectly prevented.